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PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Liquid Replenishment Reservoir

I, STANLEY HENRY CECIL, a British subject, of 12, Hansler Road, East Dulwich, London, S.E.22, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to liquid replenishment reservoirs and more particularly to a reservoir for storing distilled water for the replenishment of battery cells.

According to the present invention, a liquid replenishment reservoir comprises a container divided by a partition into two separate compartments, a plurality of spaced outlet spouts projecting externally through a wall of one compartment, an aperture in the partition, means mounted in a wall of the other compartment, for controlling the passage of liquid through the aperture between the compartments, an inlet in said wall of said other compartment and an airtight closure for said inlet.

A preferred embodiment, of the invention is described in the accompanying drawing which illustrates a reservoir for the continous replenishment of a car battery with distilled water. Referring to the drawing, the reservoir comprises a rectangular container 2 in the form of an oblong box, the walls 4 of which are made of a transparent plastic material. A partition 6 extends horizontally between the end walls dividing the container into larger and smaller compartments, 8 hereinafter referred to as the upper and lower compartments 8 and 10 respectively. The upper compartment 8 preferably has a capacity some five times that of the lower compartment 10.

The base or floor 12 of the lower compartment i.e. the base of the container, is provided with six outlet spouts 4, equally spaced along the centre line of the base, the spacing being arranged to coincide with the individual cells of a motor car battery (not shown). The outlet spouts 14 which extend normal to the plane of the base of the container are tubular and tapered at their extremeties 15 to a small diameter outlet e.g. of the order of $\frac{1}{8}$".

The partition 6 which separates the upper and lower compartments is provided with an aperture 16 which can be closed by a diaphragm valve 18 mounted on the top of the upper compartment 8 and externally operable. The valve 18 comprises a push rod or plunger 20 made of hard rubber, one end of which is enclosed within a resilient rubber diaphragm 22, which normally extends, through an aperture 24 in the top of the upper compartment 8, in alignment with the aperture 16 in the partition 6, and towards but not reaching the latter.

Depression of the plunger 20 is achieved by rotating a screw threaded cap 26 surrounding the other or upper end of the plunger 20 and co-acting with a screw threaded sleeve 28 mounted on the upper surface of the container, and causes the rubber diaphragm 22 to be stretched until it closes the aperture 16 in the partition 6. When the threaded cap 26 is unscrewed, the resilience of the rubber diaphragm 22 causes the latter and the plunger to move upwardly, reopening the aperture 16.

The upper compartment 8 is further provided with a filling opening 30, which can be closed by a threaded cap 32.

When in use for the continuous replenishment of a vehicle battery with distilled water, the container is fitted to the battery by making suitably dimensioned holes in the battery top for receiving the outlet spouts and inserting the spouts 14 into the holes until their extremities reach the level in the battery at which it is desired to maintain the electrolyte.

The partition valve 18 is then closed and the upper compartment 8 filled with distilled water and the filling cap 32 replaced. The partition valve 18 is then opened, permitting the distilled water to flow by gravity into the lower compartment 10 and outlet tubes 14. If the level of the electrolyte is below that of the outlets 15 of the spouts 14, dis-

tilled water will flow into the cells until the level rises sufficient to cover the outlets of the spouts 14 whereupon flow will cease.

Subsequently so long as there is an available supply of distilled water in the container, the battery will be automatically replenished whenever the level of the electrolyte drops.

In order to refill the container when in use, it is necessary first to close the partition valve 18, before opening the filler cap 32 in order to prevent the battery cells from being flooded.

Whilst the preferred embodiment has been described in connection with the topping-up of car batteries with distilled water, it will readily be understood that the invention may readily be applied to the replenishment of any multi-cell accumulator.

WHAT I CLAIM IS:—

1. A liquid-replenishment reservoir comprising a container divided by a partition into two separate compartments, a plurality of spaced outlet spouts projecting externally through a wall of one compartment, an aperture in the partition, means mounted in a wall of the other compartment, for controlling the passage of liquid through the aperture between the compartments, an inlet in said wall of said other compartment and an airtight closure for said inlet.

2. A reservoir as claimed in Claim 1 in which the container is in the form of an oblong rectangular box, the partition extending horizontally between the end walls of the box and dividing the container into upper and lower compartments.

3. A reservoir as claimed in Claim 2 in which the upper compartment has a volume substantially five times that of the lower compartment.

4. A reservoir as claimed in Claim 2 or Claim 3 in which the outlet spouts are equally spaced along the centre line of the base of the lower compartment.

5. A reservoir as claimed in Claim 4 in which the outlet spouts extend normal to the plane of the base of the lower compartment and are tapered at their extremities.

6. A reservoir as claimed in any of the preceeding claims in which the means for controlling the passage of liquid between the compartments comprise a push-rod or plunger, one end of which is enclosed within a resilient rubber diaphragn extending through an aperture in the upper of said compartments, in alignment with the aperture in the partition.

7. A reservoir as claimed in Claim 6 in which the displacement of the plunger towards the aperture is achieved by rotation of a screw-threaded cap surrounding the other or upper end of the plunger and co-acting with a screw-threaded sleeve mounted on the upper surface of the container.

8. A reservoir as claimed in any of the preceeding claims in which the inlet of said other compartment is disposed in the upper surface of the container and is closable by a threaded cap.

9. A liquid replenishment reservoir substantially described herein and as shown in the accompanying drawing.

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1 SHEET *This drawing is a reproduction of the Original on a reduced scale*